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[CLAIM(s)]

[Claim 1]

A multi-layer film for a bedding compression package comprising:

a polyamide resin layer in an outermost layer; and

a seal peel layer comprising an ethylene- vinyl acetate copolymer as a principal component in an innermost layer,

wherein the seal peel layer has a cohesive failure that the cohesive force is in the range of 200 - 600gf per width of 15mm.

[Detailed Description of the Invention]

[0001]

[Industrial Application]

This invention relates to multi-layer films for a bedding compression package. The invention also relates to multi-layer films in which a repeat seal is possible and can easy to open.

[0002]

[Description of the Prior Art]

As an approach of compressing and packing bedding, bedding is inserted into the bag component of the multi-layer film which consists of various layers, and after an opening part of the bag is sealed by a heat seal with a home iron, a inside of the bag is evacuated with a home vacuum cleaner and compressing bedding is performed.

However, it was difficult to perform the heat seal by the home iron completely in the conventional multi-layer film.

After packing, it was usually difficult to reopen it when another bedding was going to be inserted. Most of the time, the once sealed part had to be cut off. Even though the once sealed part remained, it was impossible to re-seal the same part.

[0003]

[Means for Solving the Problem]

This invention solves the above-mentioned problem.

This invention relates to the multi-layer film succeed in obtaining the co extrusion multi-layer film in which a repeat seal is possible and has an excellent sealing performance and opening property.

The point of this invention is the multi-layer film for a bedding compression package

characterized by a polyamide layer in the outermost layer and the seal peel layer comprising an ethylene-vinyl acetate as a principal component in the innermost layer which has the cohesive failure that cohesive force is in the range of 200 to 600gf per width of 15mm.

[0004]

Hereafter, this invention is explained in detail. The multi-layer film of this invention comprises an innermost layer and the outermost layer, and both polymer layers are specific, and other layers can be made from two or more layers which consist of various polymers.

It is necessary to use that the innermost layer is employed by the seal peel layer, which has cohesive failure that cohesive force is in the range of from 200 to 600gf per width of 15mm.

A conventional co-extrusion process is used for producing the multi-layer film. If the cohesive force is less than 200gf per width of 15mm, air may enter from a seal part after sealing for a long period of time and there may be a problem of a return of volume of bedding. If the cohesive force is not less than 600gf per width of 15mm, a part of the seal peel layer of the film remains at the opened seal part and there is a problem of difficulty of opening.

[0005]

The measuring method of cohesive force is as followed.

The multi-layer film which the ethylene-vinyl acetate copolymer layer (EVA) is heat-sealed to the innermost layer of the above-mentioned multi-layer film (seal temperature = 130 degrees C), then the sealed part is exfoliated by a speed-of-testing machine at 200mm per minute at 180 degrees. In the exfoliating test, when the peel strength is stabilized, the measured peel strength is the cohesive force.

Although a combination with various polymers is possible with a seal peel layer if satisfied of the above-mentioned cohesive force, it is preferable to add polybutene -1 (PB-1) in EVA for the 100 weight parts.

[0006]

It is necessary that the seal peel layer has the cohesive failure which produces exfloiation by cohesive failure at the time of opening of the sealed part. Even though cohesive force (peel strength) is within the range of this invention, if the seal peel layer has the interface failure, there is a problem that the effect of a seal temperature may be greater and a stabilized property may not come out.

The thickness of the seal peel layer is preferably in the range of from 5 to 15 micrometers. If the thickness is less than 5 micrometers, sealing performance is lack,

and tho oxtruding of the film become difficultly.   If tho thickness is not less than 15 micrometers, a part of the seat peel layer of the film remains at the opened seal part and it become more difficult to open the heat seal part.

[0007]

In the multi-layer film of this invention, it is necessary to put a polyamide layer in the outermost in order to protect not to weld the iron and the film when the seal part is scaled with a home iron.

As polyamide polymer, the commorcial polyamide can be used as liked Nylon 6, Nylon 66, and a nylon 6 / 66 etc.   The thickness of the outermost layer is in the rang of about from 3 to 10 micrometers.   Hereafter, an example explains this invention concretely.

[0008]

[Example]

The multi-layer film was used as the five-layer film, and the structure as followed.

[Nylon 6 / adhesive layer / Nylon 6 / EVA / Seal Peel layer]

The mixed ratio of the seal Peel layer:

EVA: 100 weight parts, (the vinyl acetate content of EVA is 5 % of the weight).

PB-1:   55 weight parts.

As a result of measuring cohesive force using the multi-layer film of the above-mentioned, it was 470gf per width of 15mm.

After making bags, a bedding is insort in the bag, and the bag was tosted at the opening performance and the possibility repeat seal performance.

as a result of this test, the opening performance was good and it could be repeat sealed.

[0009]

[Effect of the Invention]

The co-extrusion multi-layer film of this invention can be easily opened while it is excellont in the sealing performance behind a scal, and a repeat scal is possible for it, and it can be suitably used as an object for a bedding compression package.